

The Mining Journal

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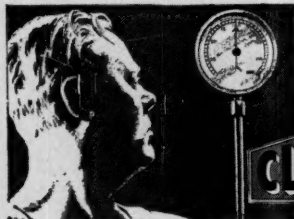
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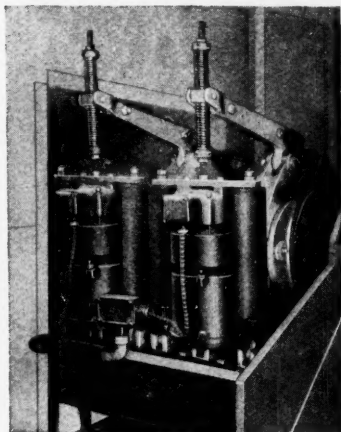
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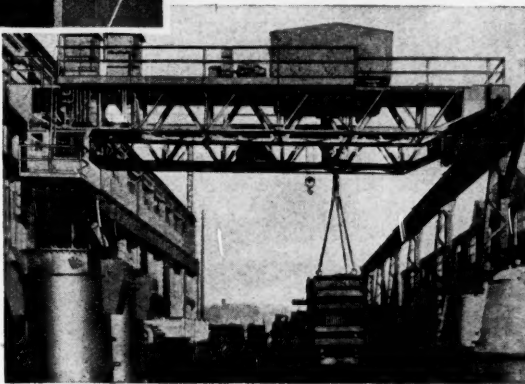
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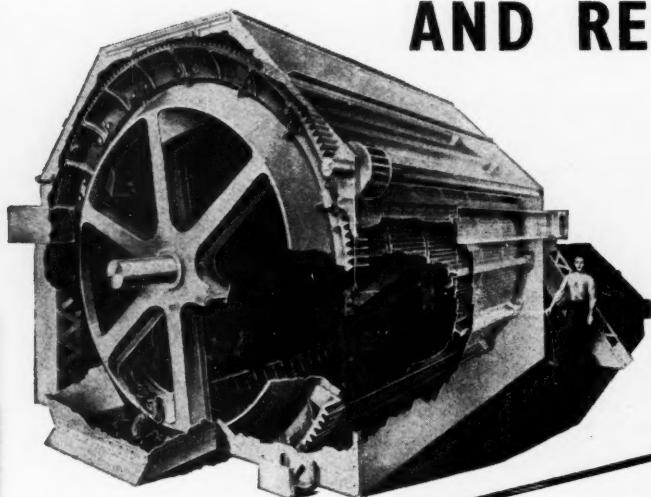
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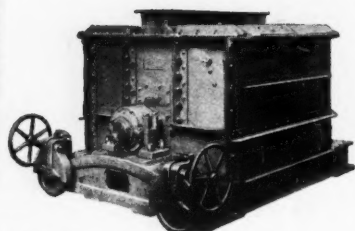


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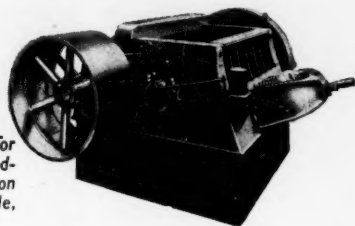
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THIS WEEK'S FEATURES

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NOTES AND COMMENTS

The National Coal Board's Work in 1950

The fifth annual report and statement of accounts for 1950 of the National Coal Board gives a detailed account of the development of that pillar of Britain's economy—the coal mining industry—during the fourth year since its transfer from private to public ownership. We are reminded that although saleable output rose slightly from 202,678,000 tons in 1949 to 204,119,700 tons last year as compared with the target, set in the *Economic Survey for 1950*, which established upper and lower limits, of 202,000,000 and 208,000,000 tons, respectively, opencast output declined from 12,439,700 to 12,185,000 tons between 1949 and 1950. The number of miners on colliery books declined further to 697,031 from 719,527 in 1949 of which 288,141 (296,197) were face workers. Output per manshift (in tons) rose a little—from 1.16 in 1949 to 1.19 last year; however, since O.M.S. stood at 1.11 in 1948 this signifies a slowing down of the rate of increase during recent years. The number of shifts per thousand tons of coal produced amounted to 838 last year, as compared with 862 and 902, respectively, in the two preceding years. However, it is worthy of note that output at the face rose more than the overall output, i.e., from 3.02 in 1949 to 3.11 last year. The corresponding figures for the number of shifts per thousand tons are 322 and 331, respectively. The attendance percentage (all workers) improved somewhat from 87.66 to 88.04, but was still below both 1948 and 1947.

Inland consumption totalled 201.71 as compared with 195,690,000 tons last year; exports and bunkers fell from 18,960,000 to 17,530,000 tons. During 1949, stocks had risen by 140,000 tons to 14,710,000 tons at the end of that year, but they fell from the latter figure to 12,430,000 tons at the end of 1950.

Readers of *The Mining Journal* will not be surprised at the disappointing nature of the above summary of the National Coal Board's activities, which is frankly admitted in the introduction to the report. The Board's self-criticism is epitomized in the words "Falling manpower and rising consumption are not passing problems; unless they are tackled with vigour they may beset the industry for many years." However, self-criticism is no cure-all and it yet remains to be seen whether the Board—grossly over-centralized as it is at present—will actually succeed in improving the situation quickly

enough. Time is not on the Board's side and the importing of U.S. coal is a grim reminder of what may happen in Britain's factories and homes in the event of a sudden emergency. During 1950, the Board bought 1,200,000 tons of American coal at f.o.b. prices ranging from \$9.80 to \$10.00 for large coal, and at freight rates varying from 50s. to 62s. 6d. per ton, to be imported before the end of the winter. "This," we quote the report, "was as much as British ports could handle in the time. Even so, if ships 'bunched' on arrival, the ports could not deal with them all."

A brief analysis of the Board's financial results for 1950 does not make any more cheerful reading: colliery profits fell from £29,400,000 in 1949 to £24,150,000 last year, due to three factors: shortage of manpower, which reduced output in some fields; greater home needs and consequently less coal available for exports, and higher cost of stores and materials.

After paying interest and interim income, the Board had a surplus on the year of £8,300,000, but as there was a deficit, before vesting day, of £200,000, and of £23,300,000 in 1947, and surpluses of £1,700,000 in 1948 and of £9,500,000 on 1949, there remains a total deficit of £4,000,000.

Whereas proceeds per ton of saleable output fell by 1.9d. to 47s. 9.6d., costs rose by 4.6d. to 45s. 4.9d., as compared with a fall by 6d. last year (the first reduction for many years) and there was a loss, before deducting capital charges and profits tax, of 6.5d. on the above basis. Of the Board's nine divisions, only the South Western and South Eastern divisions reduced costs last year (from 55s. 0.1d. to 54s. 6.9d., and from 51s. 2.3d. to 49s. 3.9d., respectively).

The section of the report devoted to technical developments states, *inter alia*, that 497 borings were drilled to a depth of 125,000 ft., compared with 297 (105,000 ft.) in 1949. Reference is made to trials with new continuous mining machinery and to the application of a continental technique in working thin seams and to trials with the U.S. Continuous Miner for use in "pillar and stall" mining. The report reveals that 70 A.B. Mecco Moore cutter-loaders were working at the end of last year as compared with 51 at the end of 1949, of this total 51 (40) were in the East Midlands division. In 1950, their average O.M.S. at the face was 6.42 tons—slightly less than in 1949, but more than twice

the average for the industry as a whole. Experiments were continued on methods of improving roof control and more schemes of horizon mining were planned. Work on methane drainage, underground lighting and standardization continued. During the year under review, 27 cleaning plants were put into operation with a capacity of 4,820,000 tons p.a. (13 plants with a capacity of 2,100,000 in 1949) and the first plant using the Ridley-Scholes dense medium process began to work at Chislet, Kent.

Fisons to Close Sulphur Gap?

Fisons, the fertilizer makers and one of the largest users of sulphur in the country, have received a favourable report from the mission lately sent out to Chile to investigate the possibility of exploiting the hitherto largely untapped deposits of sulphur in the Andes. Mr. J. M. Langley, who investigated the Chilean sulphur deposits for Fisons, stated on Tuesday of this week that there was available sufficient quantities of sulphur to bridge the gap in supplies to this country.

The deposits investigated were, however, some 20,000 ft. up in the Andes mountains where, owing to the rarefied atmosphere, only Bolivian Indians are able to work for any length of time. These conditions together with the difficulties of transporting the ore, are in fact the reasons why Chilean production has remained low. Chilean output is running at an annual rate of approximately 15,000 tons for the first six months of 1950, a considerable decline from their peak war-time figure when production at almost any price enabled output to amount to over 30,000 tons in 1944. Mr. Langley said that the deposits would be worked by opencast methods, and that with the introduction of modern mining methods output could be stepped up considerably. With regard to the supply of labour he did not anticipate any shortage.

Fisons have obtained numerous options on sulphur properties which are estimated to contain some 20,000,000 tons of ore of a content ranging from 50 to 80 per cent sulphur. So far so good, but as Mr. Langley had no useful information to impart concerning when sulphur production would begin, its estimated price or of the method of financing the scheme, it is idle to speculate on the effects which successful exploitation of these deposits would have on this country's sulphur supplies. On the other hand, it is clear that Fisons would not have done what they have already done if they had no intention of making some use of the project.

The next stage in the company's deliberations will no doubt result in the filling in of some of these essential details without which no useful assessment of the company's present commendable efforts can be made.

Goa's Mineral Resources

Goa, a small Portuguese territory on the west coast of India with an area of 1,301 square miles and a population of about 600,000, is industrially undeveloped, except for secondary industries like soap, salt, oil and the newly started match industries. The main occupation of the inhabitants is agriculture and, secondarily, commerce. Mormugao is an excellent natural harbour and the inlet for imports of foreign goods into Goa as also for the export of the bulk of Goan and a good part of Indian produce.

There are no known records of a complete geological survey of the State, writes a Correspondent. Two types of rocks are usually exposed, namely, the gneisses and schists, presumably of the Dharwar system, and the other, Laterite of Pleistocene age. These rocks are well exposed along the railway line from Castlerock to Mormugao harbour. Dharwar rocks may be presumed as the base of the laterite, since the whole territory is surrounded by Dharwar rocks.

The economic minerals of the state are a few in number and in the extent of occurrence. The minerals occurring are in the main iron ore and manganese ore; they occur usually in the laterite as concentrations and pocket deposits, but they are also exposed in the presumably Dharwar schists. Bauxite, asbestos, chinaclay, ochres and red oxide and sands are known to occur but they have not been worked on any significant scale.

Iron ore of good quality (55-65 per cent) is known to occur in wide areas, but manganese ore is usually low and medium grade (36-44 per cent Mn) and the occurrence of high grade ore (46-48 per cent Mn. and over) is very small. Only the Sanguem, Quepem, Bicholim, Saterdem districts contain iron and manganese mines of any importance. It is estimated that the reserves of iron ore in Goa amount to over 10,000,000 tons, whereas the total reserves of manganese ore of all grades are estimated not to exceed a quarter of a million tons.

Manganese ore production during the last year is estimated at about 40,000 tons of all grades, and that of iron ore at 100,000 tons. The output of high-grade manganese ore (over 46 per cent Mn) is estimated at about 5 per cent of the total manganese ore production. Export figures for the last year were about 30,000 tons of manganese ore and 80,000 tons of iron ore of all grades. The chief buyers of manganese ore were U.S.A., U.K., Belgium, Japan, Germany, Sweden, Holland, etc.

The bulk of the demand for iron ore is from Japan, Germany and Belgium and the fortunes of the mining industry in Goa followed the industrial condition of these countries. Due to stockpiling and the armament boom all over the world, demand for iron ore and manganese ore has been steadily on the increase.

Mining methods on Goa are crude and unsatisfactory, but some of the big mine owners (only Goans or other Portuguese nationals can own a mine in the territory) are now reported to be introducing mechanised mining methods.

Revival of Barytes Mines in Eire

Up to the early nineteen-twenties, when rising costs of production and transport caused their close-down as uneconomic, several barytes mines operated in the Clonakilty, Co. Cork, area. The industry, which gave considerable employment, and in consequence general prosperity to many in the area, was located chiefly in and around Muckross at Duneen while there were lesser workings a little distance away at Ardfield. The former mine since its closing down has become flooded by the Atlantic, which ebbs and flows nearby.

Recently rumour was rife that an effort would be made to get some of these mines working again, but the chance of first clearing the mine, and then ascertaining if the veins of barytes were sufficient to make for economic mining was too great for any local person or firm to undertake. Interest was revived some two or three years ago when barytes, left over since the closing of the mines, was brought up and shipped to England, where the demand was keen.

The latest development in the situation holds promise that in the not too distant future this industry may be revived. A firm from Sheffield, England, have now interested themselves in the mines in the Ardfield area, and recently the sites were visited by some officials of the firm. As a result work on clearing a site near the old north-west mountain mine is due to begin, and some twenty local workers have already been engaged.

If these preliminary tests prove successful, and if various other difficulties can be successfully negotiated, there is every reason to hope that this once thriving mining industry may be revived.

Australia

(From Our Own Correspondent)

Melbourne, June 1

At the Jubilee dinner of the Chamber of Mines, Sir Walter Massy-Greene, Chairman of the Western Mining Corporation, urged that pressure should be put on the Federal Government to secure for the Australian gold mining industry a share of premium gold sales, and contended that a free gold market would check inflation. He pointed out that in the last year over 4,000,000 oz. were sold in the free markets, that is, that 50 per cent. of the world's gold production, excluding that of the U.S.S.R. was sold at premium prices. His advocacy will have strong support from the industry. Mr. R. J. Agnew, President of the Chamber of Mines, stressed the difficulties of the industry through shortage of labour, due in some measure to shortages in the coastal districts drawing men from the goldfields; this was aggravated by increasing shortage of equipment and stores, all of which hinder to a large extent the expansion of the industry. Prospecting has almost ceased, except for the efforts of some old-timers who will not change their way of life.

The future of the industry is seriously affected by these factors, but the grade of ore reserves generally indicates that there is still a working margin over costs sufficient to take care of unfavourable factors until the price of gold is re-adjusted. During the past year, the mines of the State produced 2,463,423 tons of ore for the recovery of 608,633 f.o.z. of gold; the tonnage was 4,874 tons less than in the previous year and the decrease in gold recovered was 40,939 f.o.z. Recovery per ton of ore was 4.94 dwt. compared with 5.26 dwt. Increase in the basic wage in the year was £A.1 13s. 2d., which brought the minimum wage at the end of January to £A.11 0s. 5d., since when, a further increase has brought the basic wage to £A.11 8s. 5d. There are, of course, corresponding increases in the cost of all mining requirements.

There is continued confidence in the gold mining industry, and exploratory and development work is being carried out on a large scale by one or more companies; this activity, and the general state of development of the mines, lends strong support to Sir Massy-Greene's advocacy of encouragement by means of a free gold market.

Great Boulder Pty. Gold Mines has reported that on the 3,100 ft. level off the Main Shaft, a new lode has been cut in an east crosscut, the ore assaying 5.9 dwt. gold per ton over a width of 144 in. Driving on the new lode has advanced 95 ft., the average grade for the distance driven being 4.7 dwt. and the average width 73 in. In the 12 weeks to March 27, the mill treated 80,082 tons of ore and recovered 18,213 f.o.z. of gold.

CENTRAL NORSEMAN DEVELOPING PYRITE DEPOSITS

Following a visit to the Norseman Goldfield, Mr. A. H. Telfer, Under Secretary for Mines, stated that Norseman would become a second Kalgoorlie, his opinion being based on the developments in the Princess Royal mine and on the work being done by Central Norseman Gold Corporation, which is spending £A.300,000 on a working and development programme, the benefit of which would be seen in about 12 months' time. One shaft has already been sunk to a depth of 3,000 ft. to work the northern ore shoots opened up below the 2,000 ft. level, and a second shaft has reached a depth of 400 ft. The company has developed the large pyritic ore bodies, very low in gold, on its leases and is supplying concentrate for manufacture of sulphuric acid to Western Australian industries situated in the coastal districts. The gold possibilities of the leases will not be overlooked; attention

was directed to pyrite when the values in the company's main mine became unpayable, but it is intended to carry out an extensive diamond drilling campaign to explore for repetition of the ore zone. A survey of the field, as a basis for this work, has been completed.

Dividends paid by Western Australian goldmines in 1950 amounted to £A.1,196,088, compared with £A.843,782 in the previous year. In the first three months of 1951, however, dividends totalled £A.82,801, compared with £A.218,728 in the corresponding period of 1950.

NEW SOUTH WALES

The State's gold yield for the first two months of the year was 6,979 f.o.z., a decrease of 914 oz. compared with the corresponding period of 1950. Output is dependent on old producers and there is no new enterprise.

New Occidental Gold Mines, at Cobar, one of the contributors to the gold output, has reported that in the 48 weeks to May 6, 88,904 tons of ore were treated for the recovery of 23,075 f.o.z. of gold, from the New Occidental mine; the company's Chesney mine produced 47,902 tons of ore for 2,566 f.o.z. of gold and 729 tons of copper; treatment of slimes recovered 2,490 f.o.z. of gold from 56,766 tons of material. The company is carrying out a deep drilling programme on its leases, which include those covering the old Great Cobar copper mine. A recent report states that on this mine, drill hole No. 257 entered mineralized country at a depth of 2,090 ft., and at 2,570 ft. intersected a copper ore body which has so far been penetrated for 30 ft., or a true width of 15 ft., the drill being still in ore; the assay value of the core has not been reported.

NORTHERN TERRITORY

Australian Development Co., working the rich Noble's Nob gold mine, has just paid a dividend of 9d. per 1s. stock unit, the amount distributed being £A.112,500, which brings the total dividends paid to £A.450,000. Development is proceeding at the 215 ft. level, where wining is in ore worth 5 oz. gold per ton. So far, all ore milled has come from development and stope preparation work, no stoping having yet been done. On development results so far, the life of the mine is estimated at about 10 years, at a rate of output of 12,000-15,000 tons of ore per year.

VICTORIA

Central Victoria Dredging Co.'s second bucket dredge, which will work the Amphitheatre area, is about to commence work, electric power having at last been made available. The company's other dredge, on the Jim Crow leases at Newstead, treated 1,603,440 cu. yd. of ground in the year ended March 31, and recovered 6,393 oz. of gold, the average being 1.91 gr. per cu. yd. Profit for the year to March 31, 1950, was £A.19,105, when, as the result of three months dredging, 358,141 cu. yd. returned 2,078 oz. gold. Each dredge has a capacity of 2,000,000 cu. yd. per year. For the two weeks to April 24, the No. 1 dredge treated 60,940 cu. yd. for the recovery of 303 oz. of gold, an average of 2.4 gr. per cu. yd.

NEW GUINEA

Bulolo Gold Dredging Ltd. has experienced industrial trouble over demands for higher wages, and at May 20, no settlement had been reached. Dividend for the year ended May 31, will be 15 per cent against 20 per cent for the previous year. The company has closed down Nos. 3 and 6 dredges because of the small remaining gravel reserves ahead of them and the rising operating costs. Three of the eight dredges have now ceased work. The deep digging dredges, Nos. 5 and 7, have lives of 13 and 11 years, respectively, from June 1, 1950; the other three dredges will operate for between two and three years.

Pyrite in Coal

By A. GRAHAM THOMSON

The three principal raw materials for the manufacture of sulphuric acid are native sulphur, pyrites, and the sulphur obtained from smelter and other industrial gases. There is also a substantial production from anhydrite, a relatively pure form of calcium sulphate without any water of crystallization, which occurs in many parts of Britain.

British production and consumption of sulphuric acid now amounts to about 1,800,000 tons per annum. This requires about 600,000 to 700,000 tons of sulphur in one form or another. A significant feature of the existing crisis is that the difficulties of the sulphuric acid industry are not caused by the scarcity of sulphur generally, but by the shortage of the material in the form of little yellow lumps. Formerly, British sulphuric acid manufacturers used pyrite, which requires a relatively expensive and complicated plant. However, the development of the contact process and the availability of abundant supplies of native sulphur made possible the manufacture of sulphuric acid at a lower cost. Most of the plants established in Britain during the past ten or fifteen years have, therefore, been designed for the use of native sulphur. Unfortunately, with the exception of deposits in Sicily, sulphur in this form is found in significant quantities only in the United States. Pyrite, on the other hand, is readily obtainable from Spain, Cyprus, and from other non-dollar countries. In view of its abundance, some authorities are strongly of opinion that, in the long run, it might pay British manufacturers to revert to pyrite, despite the higher cost of the process. On security grounds, there are certainly powerful arguments in favour of such a policy.

In an article entitled "World Sulphur Reserves," by Graham Oldham, published in the April 13, 1951, issue of *The Mining Journal*, attention was drawn to the large aggregate tonnage of pyrite contained in British coal. During the 1914-18 war, quantities of lump coal-pyrite were used by the acid industry. This material was produced at several collieries by picking out large nodules of pyrite from the large-coal picking-belts. These nodules had to be hand-dressed free from adhering coal and shale. The sulphur content of the finished material varied from 38 to 42 per cent. At its peak, production of lump-coal pyrite is believed to have amounted to as much as 10,000 tons per annum. During the period between the two wars it gradually declined, however, and had dwindled to some 4,000 to 5,000 tons per annum by 1939.

FUEL RESEARCH STATION'S WORK

Between the wars, the Fuel Research Station succeeded in demonstrating the possibility of separating pyrite during coal washing. The product was recovered in the treatment of coal below $\frac{3}{8}$ in. size and contained about 40 per cent sulphur (dry basis). At that time there appeared to be no possibility of marketing it in competition with imported pyrite which contain 48 to 50 per cent sulphur. About the same period, the Rio Tinto Co., Ltd., one of the major producers of pyrite in Spain, was also examining the possibilities of recovering coal-pyrite in Britain, but the conclusions drawn from a preliminary survey were much the same as those of the Fuel Research Station.

One very interesting development took place, however, at about that time. Londonderry Collieries Ltd., erected a pilot plant at their Seaham Collieries to recover pyrite from dry-cleaner refuse. This plant consisted of a crusher and screens, followed by a Richards-type jig and one Wilfley table. Output was about 25 tons of pyrite per month, only a small proportion of the total available refuse being treated. This refuse was exceptional, in that the

pyrite it contained was remarkably pure; and material with a sulphur content as high as 46 per cent (dry basis) could be separated. The pilot plant never achieved such a high level of performance, but its product usually contained well over 40 per cent sulphur and was successfully marketed.

At the outbreak of the last war, the possibility of being cut off from overseas sources of supply led to the examination of how to utilize home-produced sulphur-bearing materials. Early in 1940, the Ministry of Supply, through its Sulphuric Acid Control, decided that an intensive survey should be undertaken with the dual object of finding further supplies of lump-coal-pyrite and of discovering the possibilities of installing concentration plants to recover "fines" pyrite from colliery refuse. Mr. C. T. Hill, of the Rio Tinto Co., Ltd., and Dr. D. T. Davies, Principal Scientific Officer, Fuel Research Station, were loaned to the Sulphuric Acid Control for this purpose, and the Fuel Research Organization placed the Coal Survey Officers at the disposal of the Ministry. Mr. Hill was recalled by his company in September, 1940, by which time much of the survey work had been completed.

At the outset, it was decided to attempt to make a product containing about 42 per cent sulphur and costing approximately 25s. to 30s. per ton at the recovery plant, this being the approximate c.i.f. value in 1938/39 of imported pyrite (48 per cent sulphur). This meant, in effect, that washery or dry-cleaner refuse containing as little as 10 per cent pyrite could be treated, if available without transport charges, on site at the concentration plant. Any refuse containing more than 10 per cent pyrite could be sought some distance from the concentration plant if available, free of charge, at the producing colliery and if transport charges were not excessive. The only material worth transporting over some distance for concentration was nodular pyrite, containing at least 20 per cent sulphur.

THREE IMPORTANT U.K. PRODUCERS

From the middle of 1940 to September, 1945, total production of lump coal-pyrite was 44,389 tons, corresponding to an average of approximately 8,500 tons per annum. Three producers—Morris & Shaw (Birch Coppice), Kingsbury Collieries, and New Bagworth Coal Co.—were responsible for over 55 per cent of the production of lump coal-pyrite for the whole country.

About half the total output of lump material was used for acid-making, some crushing and screening being required before it could be successfully handled. Difficulties were caused by the effect of low-sulphur and high carbon content. The sulphur content varied between 38 and 42 per cent and the carbon content was about 10 to 12 per cent. This meant that the ore developed much more heat on roasting than the imported ore and the carbon also used some of the oxygen to form carbon dioxide, thus reducing effective chamber space and plant capacity. Some price adjustment in relation to foreign ore had, therefore, to be made, the effect being that most acid manufacturers paid 60s. per ton delivered for imported material and about 30s. per ton delivered for lump coal-pyrite. Three acid makers were mainly concerned, but a number of other manufacturers used small quantities of lump coal-pyrite generally mixed with imported ore.

The cinders remained the property of the Ministry of Supply and were disposed of to the Iron and Steel Control for use as iron ore in blast furnaces. Some 60 per cent by weight of the green ore was recovered in the case of coal pyrite, compared with 70 per cent of the imported material.

The second use of the lump material was for copper refining. Normally, copper smelters would use "copper matte," or at least pyrite having some little copper value to offset losses of copper in the slag. Since materials of this nature were not available, copper smelters had to use limited supplies of run-of-mine imported pyrite and lump coal-pyrite. Here again, a price adjustment was necessary to ensure the use of the relatively inferior home-produced material. It was eventually found that certain copper smelters could use coal-pyrite lumps of lower grade than those required for acid manufacture. Therefore, Grade II lumps, containing 30 to 37 per cent sulphur were collected when possible.

COAL-PYRITE FINES

Eight plants for the recovery of coal-pyrite fines were installed with input capacities ranging from 10 to 15 up to 25 tons per hour, the aggregate capital cost being £197,916. Each plant was erected and operated by the colliery concerned as agent for the Ministry.

The last plant to be designed and to go into operation was the Bickershaw Collieries plant, Bickershaw, which proved to be the most efficient and the most successful financially. Production started on April 1, 1943. This plant could not have been justified on pyrite recovery alone, but it was known that the colliery company was in serious difficulty with burning spoil banks and that the refuse contained very large quantities of inter-grown coal as well as pyrite. Preliminary tests showed that by crushing all the refuse to pass $\frac{3}{4}$ in., it should be possible to recover 25 to 30 per cent as coal (ash content about 15 per cent), and about 5 per cent of very good quality pyrite (+ 42 per cent sulphur). The plant was, therefore, arranged to handle the whole of the colliery refuse, including belt pickings and dry-cleaner refuse, and to do this, a capacity of 25 tons per hour was provided. Several short trials to determine recovery efficiencies were carried out from time to time. Pyrite recovery was maintained at the level of 75 to 80 per cent, the losses being entirely in the dead-fine material. Coal recovery efficiency was not quite so high and averaged 65 to 70 per cent.

From the inauguration of the various plants to September 30, 1945, total production of coal-pyrite fines amounted to 72,122 wet tons or 69,456 dry tons, the average sulphur content (dry basis) being 42.3 per cent. The average sulphur contents for individual mines ranged from 38.7 to 44.4 per cent, the highest quality being achieved by the Londonderry plant, built to handle the same refuse as the pilot plant previously mentioned. The carbon content varied from about 4 to 9 per cent, being generally lowest in those plants which had shade in the form of dry-cleaner and washery refuse to deal with, and highest in those that had large proportions of "brasses" in their feed material.

COSTS ANALYZED

On the basis of cost per input ton treated, four of the plants had costs ranging from 22s. 5d. to 33s. 5d. per ton. The operating labour costs ranged from 5.8d. to 11.3d., services from 3.7d. to 7.5d., maintenance costs from 4.4d. to 10.5d., and overhead charges and depreciation from 5.6d. to 9.4d.

With one exception, these coal-pyrite fines were used on chamber plants, and mainly by acid manufacturers, who required a low-arsenic material. In some of the chamber plants, coal pyrite was used alone, but this presented a number of problems, mainly concerned with carbon content. The ores burned much more fiercely and developed higher temperatures than imported ore. This caused difficulty with "rabble arms" on the Herreschoff furnaces and, in some cases, the whole "bed" tended to sinter owing to

the higher temperature. More careful control of the air supplies was necessary to spread the burning down the furnaces. Since the presence of carbon dioxide in the chamber gases tended to reduce chamber capacity, many manufacturers burned a mixture of coal pyrite with imported pyrite and arranged to keep arsenic contents within limits.

Arsenic contents of the coal-pyrite varied between 0.03 and 0.08 per cent, with a general tendency for the bulk of the material to be low in that range. Phosphorus content was of the order of 0.05 per cent (P_2O_5). The major impurities, in addition to carbon, were the usual constituents of coal ash: silica, alumina, magnesia and lime. For some time it was feared that the traces of many impurities that could be present in any material derived from coal made it impossible to use coal pyrite on contact plants, because of the danger of poisoning the catalyst. However, eventually it became necessary to make the experiment. A blend with imported ore was used, in which the coal pyrite was gradually increased to 75 per cent without any effect on the catalyst over many months of working.

Among the difficulties encountered by acid manufacturers was the tendency for spontaneous combustion to take place in their stock piles. This trouble was overcome by holding small stocks, which were turned over regularly, no heaps being made over 10 ft. deep.

ADVANTAGES OF PYRITE RECOVERY

During the war period up to the end of September, 1945, total recovery of coal-pyrite in the form of lump and fines amounted to over 115,000 tons. In the pyrite-recovery plants, there was an incidental recovery of approximately 140,000 tons of coal, most of which would normally have found its way to the refuse heaps. Apart from savings in shipping space and foreign exchange, pyrite-recovery also led to a corresponding reduction in the amount of refuse discarded by the collieries concerned and to some reduction of the difficulties due to refuse-tip fires.

From all points of view, the plants following the general lines of coal-cleaning technique were the most efficient. From the financial aspect, some plants were more successful than others, but taking all of them together, and considering as one unit the Ministry of Supply and the operating companies, the cost of the plants was recovered by the end of 1946.

SOME ORIGINAL PLANTS STILL WORKING

Some of the original eight plants are still working and the coal-pyrite recovered continues to be used by acid manufacturers. The continued use and development of coal-pyrite is a valuable contribution to the problem of raw material supplies. The peak war-time production of coal-pyrite lumps and fines, however, amounted only to about 35,000 tons per annum, containing, say, 40-42 per cent sulphur, equivalent to some 14,000 tons per annum. It is improbable that any very substantial increases over that peak could quickly be reached.

The problem is now to find as rapidly as possible a substitute for the 350,000 to 400,000 tons of American sulphur used annually by acid manufacturers. The solution lies partly in anhydrite and partly in imported pyrite, which seem to be of more immediate importance than such longer-term projects as the recovery of sulphur from coke-oven gas, chimney gases, etc.

Much can also be done to economize in the use of sulphur and sulphuric acid and to recover these commodities after primary use; for example, CS_2 in the rayon industry, and pickle liquors and coppers from many industries. Most important of all are possible changes in the nature and composition of fertilizers, manufacture of which requires at present much sulphuric acid.

Asbestos Mining in Canada

The following details and figures relating to the situation of the Canadian Asbestos industry at the beginning of this year appeared in the February, 1951, issue of *Mineral Trade Notes*, published by the U.S. Bureau of Mines:

It is estimated by asbestos producers in Canada that their mines and mills account for 70 to 80 per cent of the world's asbestos production. A closer estimate is not possible, because Russia's production of asbestos is not known. During 1950, it is estimated that Canada produced between 875,000 and 880,000 tons of asbestos of all types, a substantial increase over the 1949 output, which was lower than it would have been normally because of the prolonged strike at Thetford Mines and Asbestos, Quebec, at which time all production except that carried on by the Bell Asbestos Co. was at a standstill.

Production of asbestos in 1950 was increased without any appreciable expansion in milling capacity by the introduction of improvements in mining and processing methods, and by the co-operation of labour. The one company that produced during all of both years—Bell Asbestos produced 42,000 tons of asbestos fibre in 1950, compared with 37,000 tons in 1949. Comparable month by month production of other companies for the two years (excluding the strike period) shows approximately the same ratio of increase.

PRODUCTIVE CAPACITY INCREASED

The most important increase in productive capacity during 1950, which did not occur until late in the year, was made by the Asbestos Corp. at their British-Canadian mill at Coleraine, district of Quebec, where daily rock tonnage capacity was increased from 2,000 to 4,000 tons. Also, in 1950, Johns-Manville built a mill at Munro Township, Ontario, the first to be built outside the Quebec asbestos district. When operating at full capacity, it will be capable of crushing 1,500 tons of rock per day.

Johnson Asbestos Co. is constructing a new 4,000 ton mill at Coleraine, which should be in production soon. This company will also expand its milling capacity at Coleraine from 1,200 to 4,000 tons. Another small mill, of minor importance, is a 300 ton mill being erected by Coleraine Asbestos Co. in Coleraine, Quebec.

Johns-Manville and the Asbestos Corp. are contemplating other expansions of mill capacity, which should show appreciable increases in tonnage output during 1951, 1952, and 1953.

The following table indicates the mill capacity in existence at present:

	No. of mills	Daily rock tonnage
THETFORD MINES:		
Beaver & King Mills (Asbestos Corp.) ...	2	6,000
Johnson Asbestos Co.	1	2,000
Bell Asbestos Co. (Turner & Newall) ...	1	1,500
Flintkote Mines	1	1,200
COLERAINE DISTRICT:		
Asbestos Corp. (Vimy Ridge)	1	2,800
Asbestos Corp. (British Canadian)	1	4,000
Johnson Asbestos Co.	1	1,200
DANVILLE DISTRICT:		
Johns-Manville Co.	1	12,500
Nicolet Asbestos Co.	1	1,500
EAST BROUGHTON DISTRICT:		
Quebec Asbestos Co. (Philip Carey)	1	1,500
Total ...	11	34,200

The King mills (Asbestos Corp.) at Thetford mines are already underground, although still mining some surface ore. The Beaver mill, owned by the same company, also at Thetford mines, will go underground before long. Johnson Asbestos Co. is making preparations, as is the Bell Co. (both at Thetford mines), to go underground. Another mill reported to be going underground within two or three

years is the Johns-Manville mill at Danville, Quebec.

All mills except the Nicolet Asbestos Co. (Philip Carey Co.) appear to have adequate ore for many years to come, either in the pits they are operating at present, underground, or in undeveloped, but proved reserves. Nicolet and Quebec Asbestos are looking for new ore deposits, as it is not believed that their mines are good for more than another ten years.

Current and contemplated expansions of production capacity by producing companies are stated to be based on present consumption, plus normal increases in demand owing to new uses of asbestos and the increasing demand for these products now requiring asbestos for their manufacture.

DEMAND NOT APPROXIMATED

Asbestos producers admit that the present level of production does not nearly approximate current demand, but it appears to be their belief that any appreciable recession in building and construction would soon alter this position. No plans for expansion appear to be under consideration for exigent conditions such as war. According to representatives of the producing companies, were large military demands to be placed on the industry, it appears that civilian requirements would receive only such asbestos as was left.

Instances have been reported where Canadian producers have refused to honour United States defence order ratings tendered by not readily authenticated sources, giving as their reason that they exercised self-imposed controls under a "gentlemen's agreement" during World War II and feel that they should not now be required to upset their distribution system, at least until such time as they are ordered to do so by the Canadian Government. It is reported that no specific instructions as to distribution and allocation of asbestos have been given to asbestos producers by the Ottawa Government to date.

Less than one-tenth of one per cent asbestos of Canada's asbestos production is in the crude group, (approximately 900 tons annually), and only about 25,000 tons of spinning fibre is produced each year. The shingle stock and paper stock groups, along with Group 6 and shorts, account for the preponderant portion of Canada's production. During 1950, the greatest proportionate increase of production was in the shorts group, for which a large increase in demand was created by the manufacturers of asphalt floor tile.

The domestic demand for Canadian-produced asbestos ranges from 5 to 7 per cent of total production, the remainder being exported. Producer-consumers in Canada are Johns-Manville, Bell Asbestos, Flintkote, and Philip Carey. In addition, there are some other smaller manufacturers of asbestos and asbestos products and users whose product requires asbestos as a component.

LARGE SHIPMENTS TO U.S.

Of the 703,045 tons of asbestos produced in Quebec Province in the first ten months of 1950, 703,035 tons was shipped to consumers. This clearly indicates that no appreciable inventory of asbestos is held in reserve by the producing companies. Of the 709,505 tons total production of Canada for the first ten months of 1950, it will be noted that 670,053 tons was exported. The U.S. received the largest part—539,749 tons—of all asbestos exports in 1950, as it has ever since asbestos was produced in Canada. Of this total, crude accounted for 395 tons; milled fibres for 145,926 tons, and waste, refuse, and shorts for 393,473 tons.

Machinery & Equipment

Fluorescent Lighting for Colliery Picking Belt

Modern methods of illumination can do much towards ensuring high quality coal output by assisting the work of sorting and rejecting low-grade fuel on colliery picking belts. At the Ansley Hall Colliery, Nuneaton, the picking belt has been lighted by an installation of twenty fluorescent lamps in G.E.C. fittings, specially designed for use in situations of this kind, where the air is dust-laden so that protection is necessary for the lamps and auxiliary gear. The 5 ft. 80W. lamp in each fitting is enclosed by a



Illustration of picking belt at Ansley Hall Colliery, Nuneaton, by fluorescent lamps in G.E.C. dust-proof fittings

cover of 3/16 in. armour plate glass which renders the interior of the fitting dust-proof when in position, but can be completely detached for cleaning. When replacing a lamp, the cover need not be removed entirely, but can be opened on its hinges. Felt gaskets are fitted at the joints of the cover and of the lid of the gear housing on top of the reflector. The fittings are mounted 5 ft. above the belt, with a spacing of 9 ft. The average illumination on the belt is 19 lumens per sq. ft.

Tudor Battery Equipment for Colliery Shaft Signalling

The conventional system of D.C. power supply for shaft signalling employs a battery and floating rectifier. The rectifier equipment may have manual adjustment of the output or alternatively an automatic constant potential rectifier assembly may be incorporated, but in either case a system whereby the battery normally floats across the rectifier at a voltage equivalent to 2.3 volts per cell is recommended. This is principally to ensure that an absolutely fully charged battery is available for an emergency. However, the normal voltage of 2.3 volts per cell may be considered too high for some installations and to ensure close voltage limits under all conditions, The Tudor Accumulator Co., Ltd., 50, Grosvenor Gardens, London, S.W.1, has developed a special dual battery automatic equipment. (Patent applied for).

This equipment is stated to be the first on the market, having automatic charge and discharge, and automatic battery change-over features requiring the minimum of supervision, and providing a completely reliable D.C. supply with minimum voltage limits. The signalling load is supplied by one of two duplicate batteries, the change over from one to the other being effected automatically as one battery becomes discharged. Red indicating lamps are included to show which of the two batteries is on charge and a green lamp to indicate that there is no fault in the contactor coil circuits, while alarm relays are also provided to give warning of failure of charge current and of A.C. supply to rectifiers.

The B.J.-D. 61-H.G. Spillage Conveyor

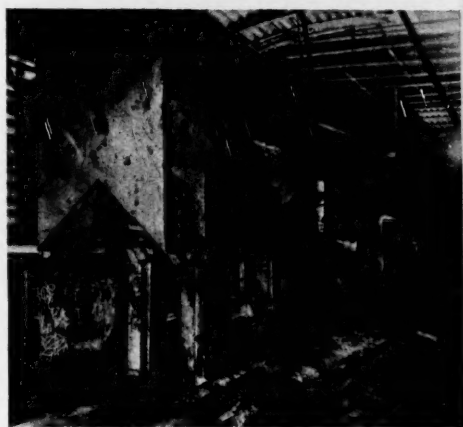
During the past few years, it has been the tendency in modern collieries to concentrate coal output channels into as few loading points as possible in order to save manpower on loading. The majority of British mines are still using pit tubs of small capacity and, while it is essential that each tub should carry its maximum load, the operator at the loading point has the natural tendency to lower his tub rather too soon in order to avoid spillage from overload, and to avoid piles of coal at the loading point, which must be cleared manually.

An efficient spillage conveyor can not only eliminate such loading troubles but, in addition, ensure maximum loads and quick turn-round of tubs. With a dependable unit, there is also an appreciable labour saving.

With the above points in mind, British Jeffrey-Diamond Ltd., Wakefield, has adapted the B.J.-D 61-H.G. Scraper Chain Conveyor for use as a spillage conveyor operating in conjunction with pneumatic and other devices, controlling the flow of tubs beneath the loading point.

During filling, the tub stands over the pit or hopper into which any spillage falls. A strong, coarse mesh screen, arranged over the hopper to safeguard persons passing over it, is sufficiently large in mesh to allow the coal to fall through. The base of the hopper is built at an angle and the coal is thus automatically diverted to one side, where it falls on to the spillage conveyor, which elevates it either on to the coal-carrying strand of the trunk or gate belt conveyor, or alternatively, discharges it into empty tubs at the loading point.

The width of a normal scraper chain conveyor drive head may have some adverse effect on working conditions, where usually little space is available and, for this reason, the motor and speed reducer of the B.J.-D. 61-H.G. Spill-



The B.J.-D. 61-H.G. Spillage Conveyor

age Conveyor are compactly housed beneath the drive head frame of the conveyor. Consequently, a very compact and highly suitable unit has been formed. A guided, single strand chain ensures smooth operation between the horizontally disposed tail end and the inclined structure of the conveyor.

The angle of elevation is approximately 15° and the conveyor is supplied in lengths to meet site requirements and can be extended by the inclusion of standard sections and appropriate lengths of chain.

Metals, Minerals and Alloys

Copper.—Kennecott has been selling Chile copper, at the world price of 27.50 c. f.a.s. New York and European countries have been doing business at the same figure, but so far no relief has been offered to domestic producers and Customs smelters who are still hampered by the domestic ceiling price of 24½c. However, a possible solution is suggested by the action of the Office of Price Stabilization in decontrolling manganese to be followed shortly by similar action with regard to chrome, due to the fact that the General Services Administration can no longer make contracts in excess of the O.P.S. ceiling for minerals required for stockpiling under the Stockpiling Act. The authority to contract in excess of ceiling prices lapsed in April and was not renewed. Ceiling prices for other minerals are expected to be removed from controls singly at an early date, and the necessity of relieving shortages, whether for stockpiling or under the Defence Production Act, may possibly open an avenue for relief in regard to the metals also.

U.K. stocks of copper improved in April to 115,040 tons as compared with 108,926 tons at the beginning of the month, according to the British Bureau of non-Ferrous Statistics. Consumption in April was 46,997 tons bringing the total for the first four months of the year to 190,357 tons of which 110,854 tons were new copper. Consumption for the first four months of last year was 165,548 tons.

It is reported that the first seven units of the Chuquicamata plant for processing sulphide ores were about 40 per cent completed at the end of 1950 with operations scheduled to begin early in 1952. The 110,000-ton Ptoae national smelter may, it is hoped, be opened later this year. It is hoped that the Belgian copper output this year may reach 145,000 tonnes, compared with 132,000 tonnes last year. Exports in the first year were approximately 27,000 tonnes. Japan's output of electro copper in April is reported at 7,018 tons.

Lead.—Domestic supplies of lead in the United States continue in very short supply affecting Defence Orders as well as civilian requirements. Mexican lead in limited quantities has been sold to Europe at 21.50-22c. per lb., f.a.s. Gulf Ports. The declining trend of imports of foreign lead into the U.S. has resulted in further trade advocacy of higher ceiling prices. Some small relief may result from the reduction of import duties last week under the Torquay agreement but Congress is to be asked to suspend the duty entirely for two years. Exports of lead from Canada in the first quarter of the year are computed by the A.B.M.S. at 27,482 s. tons compared with 17,441 s. tons for the same period of last year. The U.S. received 20,371 tons and the U.K. 5,671 tons. Belgian exports are expected to total about 50,000 tonnes this year, with production 62,000 tons.

Tin.—The R.F.C. cut their selling price for Grade A. tin on Saturday last by 7c. to \$1.29 per lb. and again on Wednesday by a further 6c. to \$1.23 (equivalent on a flat basis to £984 per ton), in pursuance of their declared policy of doing everything possible to get the world price down. Their earlier declaration that their price would be based on the course of the Singapore market seems to have been definitely reversed. The action of the United States purchasing monopoly has of course led to a further fall in Singapore and the latest prices for Straits and London are given by our Metal Exchange Correspondent below. Thus the "gouging" of the American consumer now takes on a reverse complexion of seeking to "gouge" the producer. What the next move will be it is impossible to conjecture;

so far there is no news of a new Bolivian contract with its accompanying revised price. Bolivian exports in April were heavy at 3,507 tonnes bringing the total for the four months up to 10,650 tonnes against 9,977 tonnes for the same period last year. It is reasonable to suppose that the heavy April exports reflected a belief in La Paz that prices were likely to go down. The output of tin from the Texas smelter in May was 3,059 tons making the total for the five months 15,460 tons as compared with 13,054 tons a year ago. Production has varied hardly at all in the last four months suggesting that the smelter is working to a fixed schedule of published output. Indonesian production in May is given as 2,713 tons making the total for the five months 12,811 tons against 13,112 tons a year ago.

U.S. Commerce Department gives stocks at the end of 1950 as 66,829 tons, compared with 66,225 tons at the beginning of the year excluding Munitions Board stocks. Total imports of metal in the twelve months were 108,702 tons compared with 98,535 tons in 1949, but imports of concentrates were lower, at 25,785 tons of contained tin compared with 38,311 tons. Supplies of secondary tin in 1950 were 30,930 tons against 21,968 tons. Consumption was computed by the Department of Commerce at 77,101 tons.

Zinc.—The disparity between the domestic zinc price in the United States of 17.50c. and the export price has been further emphasized by an advance in the export price for Prime Western to 30c. per lb. f.a.s. bid. The O.P.S. has announced a roll-back in scrap prices to a level of 70 per cent of the primary zinc price and has put an end to the grey market by denying dealers the price premiums on scrap previously obtaining. U.S. output of slab zinc recovered in May to 80,430 s. tons (15,442 high grade, 1,393 intermediate, and 39,095 prime western). Total shipments for the month amounted to 77,567 s. tons. Unfilled orders were lower on the month at 73,942 s. tons (77,293 in April), and stocks increased to 17,411 s. tons (14,548). Exports of zinc from Belgium this year are not expected to show much change being foreshadowed at 120,000 tonnes against 119,000 tonnes last year. Shipments of zinc concentrates from India are being resumed by an Indian firm working at Zawar near Udaipur. 930 tons were recently despatched to Rotterdam.

Manganese.—It is reported from Tokio that Japanese manganese requirements this year have been estimated at 300,000 tons, of which 140,000 tons should be covered by home production and 160,000 tons imported. Of this, India is expected to supply 110,000 tons, the Philippines 20,000 tons and the French Union 20,000 tons, with smaller amounts from Goa, Mexico and Greece.

The discovery of a large manganese deposit is reported by the Venezuelan Ministry of Mines and Hydro-carbons near Uputa in the State of Bolivar. Earlier another discovery was reported in the State of Carabobo.

Molybdenum.—The U.S. Defence Minerals Administration is imposing complete control over all domestic shipments and imports of molybdenite from the end of the month.

Nickel.—Further cutbacks in the supplies of nickel for civilian production are forecast in the United States by the N.P.A. Administrator, Mr. Fleischmann, who described the present situation as bad. The Government would try to get more nickel from Canada and from re-activated sources.

Tungsten.—The price of wolfram ore in London is if anything slightly steadier and may be called 565s. to 575s. per unit c.i.f. We have heard of bids for high grade material for prompt delivery at 575s. but of course the quotation depends on date of delivery.

At a meeting of wolfram mine owners and exporters in Oporto, last week, it was agreed that the double export charges made, trade impossible and a delegation was sent to Lisbon to ask for the abolition of either the Esc.36 export tax or the Esc.40 per kilo. export duty. As a result the Director General of Commerce has stated that the export tax will be abolished, and the 40 Esc. duty retained.

Uranium.—Reuters Ottawa agent reports that development of the largest uranium field yet discovered in the North American continent has begun at Beaver Lodge Lake in Saskatchewan. It is expected to yield five times as much uranium ore as the mine at Great Bear Lake, in Canada's North West Territory, hitherto the only producer on a commercial scale in Canada. The process of development will be undertaken by the Government-owned Eldorado Mining and Refining Company of Canada. The aim is to produce 500 tons daily, but it is hoped to double and even triple this figure. A mill with a 500 ton capacity will be built with a view to its being expanded to 2,000 ton capacity, if necessary.

Diamonds.—There appears to be some resumption of activity in the mining of diamonds in India at the old centre of Panna, where the newly formed Panna Mining Syndicate reports the discovery of a 30-carat stone said to be about a third the size of the Koh-i-Noor, and valued at Rs.50,000. A Reuter report from Dar-es-Salaam said that the dispute over diamond sales between the Diamond Sales Corporation and Dr. J. T. Williamson, controlling the Mwadue Diamond Mines, continues. This dispute is said to be over the operation of the agreement under which Tanganyika is given a quota of 10 per cent of the Corporation's sales. Apparently the conference at the Colonial Office was unsuccessful in solving the dispute last November.

The output for French Equatorial Africa which was reported to have been around 135,000 carats last year is to be increased, as a result of the E.C.A. aid to French mining firms, by, it is hoped, a further 100,000 carats in the next twelve months.

Gold.—The Transvaal output in May showed a very considerable recovery with a total of 987,342 f.o.z. against 948,291 f.o.z. in April. It was however, below the total for May, 1950.

Silver.—The price of foreign silver was lowered in New York last week to 87½c. per f.o.z., the first change since January 8, when the price was raised to 90.16c., and the price for "essential" silver here was correspondingly reduced to 78½d. for spot and 76d. for forward.

The London Metal Market

The main feature in the Tin market during the past week has been the announcement by the R.F.C. on Friday of last week of a further reduction of 7c. per lb. (£56 per ton) followed by a further reduction of 6c. on Wednesday, which brings the New York quotation for grade A. tin down to 123c. per lb., equivalent to £984 per ton. Friday's announcement had the effect of enhancing the easy tone which had been evident on the London market for several days, and by the close of business for the week, the forward quotation had broken the £1,000 mark. Although the Eastern market over the weekend did not react in full sympathy with the sharp drop in London and New York, the prices for both Cash and Forward Tin fell back further on the London Metal Exchange on Monday, and by mid-week Three months had changed hands at £950. This followed a sharp fall in Singapore which brought the quotation for Straits Tin to the lowest level reached so far this year.

Whilst up to now demand from other sources has been sufficiently strong to absorb available quantities of metal, it is felt that this is now possibly reaching saturation

point and this coupled with the fact of the complete absence of any demand from New York, might have a further depressing effect on the Eastern market.

It still remains a matter of speculation as to the extent to which the U.S. authorities intend to roll back the price of tin, and whilst the opinion has been held that \$1.25 might have been a reasonable figure in view of the increasing costs, it is still considerably above the price which was talked of at one time, and recent events have proved this estimate to be erroneous.

On Thursday the official close on the tin market was: Settlement price £960, Cash Buyers £960, Sellers £965; three months' Buyers £927 10s., Sellers £930. In the afternoon the market was slightly easy. Turnover for the day was 175 tons. Approximate turnover for the week was 955 tons.

The Eastern price on Thursday morning was equivalent to £973 15s. per ton, c.i.f. Europe.

Iron and Steel

Users of iron and steel are becoming increasingly anxious about their supplies—perhaps unduly anxious. After all, production is running little below the record rate achieved last year, but since 1950 the pressure of demand has been increased by the re-armament programme and it is recognised that other interests may have to go short, in order that the momentum of the arms drive can be accelerated.

Typical of the anxieties of other steel users was the conference on the North-East Coast between the steel-makers and the shipbuilders and repairers, for the special purpose of discussing the steel requirements of the industry and ways and means of ensuring a regular flow of deliveries to the shipyards. No final conclusions were reached. Another conference is to be held later, after the position has been more closely examined.

In the meantime Mr. George Strauss the Minister of Supply is working out the details of his allocation scheme and is expected to make an early announcement. That announcement may also embrace an authorisation for a substantial increase in steel prices. Since the advance in February last production costs have been increased by higher rail freight charges which were raised by 10 per cent at the beginning of April, and wages of blast furnacemen have also been raised. When railway freight charges were previously advanced in May of last year the steel industry absorbed the additional cost, which amounted to about £6,000,000 per annum but it is generally believed that the more recent additions to steel makers' costs will have to be passed on to the consumers.

Until these uncertainties are dispelled by some official pronouncement, steel makers are by no means anxious to add to their commitments. They already have well filled order books: in fact deliveries are in arrears and they can well afford to wait until the outlook is clarified.

The pig iron position is a little more hopeful. The fuel crisis is past and more tonnage should soon be available for the transport of foreign ore which is awaiting shipment from the ore ports. In the meantime there is a serious shortage of haematite and low and medium phosphorous irons, though No. 3 foundry iron is not so scarce. The scrap shortage is unrelieved, and re-rollers are handicapped by the fact that shipments of steel services from Western Europe have fallen to very small proportions. There is a lamentable deficiency in the supply of small billets which adversely affects the operations of the light section mills, and sheet makers are anxious about their supplies of sheet bars and slabs.

The plate mills are turning out big tonnages but cannot keep pace with the demand. Rail and section mills are working to capacity limits and there is a big overseas demand for steel bars and wrought iron tubes.

Coal

The Ministry of Fuel and Power reports the output of coal for the week ended June 9 as 4,216,900 tons, a fall of 304,000 tons. Distributed stocks were 10,793,000 tons as compared with 10,409,000 tons in the previous week. The number of men on colliery books was unchanged at 702,400.

JUNE 14 PRICES

COPPER

Electrolytic... .. £234 0 0 d/d

TIN

(See Metal Notes above for Thursday's Metal Exchange prices)

LEAD

Soft foreign, duty paid £160 0 0 d/d

Soft empire, including secondary lead £160 0 0 d/d

English lead £161 10 0 d/d

ZINC

G.O.B. spelter, foreign, duty paid £160 0 0 d/d

G.O.B. spelter, domestic £160 0 0 d/d

Electrolytic and refined zinc £164 0 0 d/d

ANTIMONY

English (99%) delivered,

10 cwt. and over £390 per ton

Crude, (70%) £305 per ton

NICKEL

99.5% (home trade)... .. £454 per ton

OTHER METALS

Aluminium, £124 per ton. Palladium (scrap), £8 oz.

Bismuth, 22s. 6d. lb. Platinum, £27/£33 5s. nom.

Cadmium, 18s. 3d. lb. Rhodium, £45 oz.

Chromium, 5s. 3d. lb. Ruthenium, £30 oz.

Cobalt, 15s. 6d. lb. Quicksilver, £73 10s./£74

Gold, 248s. f.o.z. ex-warehouse.

Iridium, £65 oz. nom. Selenium, 25s. nom. per lb.

Magnesium, 1s. 6d. - 2s. lb. Silver (bar), 76½d. f.o.z. spot

according to quantity. and forward.

Osmiridium, £35 oz. nom. Tellurium, 19s. lb.

Osmium, £70 oz. nom.

Palladium, £8 10s. oz.

ORES, ALLOYS, ETC.

Bismuth 65% 15s. 9d. lb. c.i.f.

60% 15s.

Chrome Ore—

Rhodesian Metallurgical (lumpy) £11 per ton c.i.f.

" " (concentrates) £11 per ton c.i.f.

" " Refractory £10 12s. per ton c.i.f.

Baluchistan Metallurgical £11 11s. per ton c.i.f.

Magnetite, ground calcined £28 - £27 d/d

Magnetite, Raw £10 - £11 d/d

Manganese, Best Indian (Nominal)

Molybdenite (85% basis) (Nominal)

Wolfram (65%), U.K. 56s. 575s. c.i.f. nom.

Tungsten Metal Powder 34s. 6d. nom. per lb. (home)

(for steel manufacture)

Ferro-tungsten 32s. 6d. nom. per lb. (home)

Carbide, 4-cwt. lots £30 3s. 9 d/d per ton

Ferro-manganese, home £37 19s. 10d. per ton

Ferro-manganese, export Nom.

Brass Wire 2s. 6½d.

Brass Tubes, solid drawn 2s. 0½d.

Mining Men and Matters

Sir Reginald W. A. Leeper and Mr. P. J. Oppenheimer have been elected directors of Consolidated Co., Bultfontein Mine, Grigoland-West Diamond Mining Co., Du Toits Pan Mine.

Mr. J. E. Pegg, president of the Yorkshire South East Branch of the Association of Mining Electrical and Mechanical Engineers, and chairman elect of the Sheffield Sub-Centre of the Institution of Electrical Engineers, has now joined the staff of the Belmos Co., Bellshill, Lanarkshire, and will as from June 1 represent the company in Yorkshire, Derbyshire and Nottinghamshire.

Mr. W. A. Odgers has been appointed a director of Nchanga Consolidated Copper Mines, Rhodesia Copper Refineries, Rhodesian Anglo American and Rhokana Corporation.

Cyanamid Products have announced that as from Monday, July 23 next the Ore Dressing Division of the company will be established in new offices on the 8th floor, North-West Wing, Bush House. From that date all communications should be addressed to the company at Bush House, Aldwych, London, W.C.2.

Correspondence

To the Editor, "Mining Journal."

Dear Sir,

I observe in your last week's issue under the heading "Revival of Cornish Mining Industry in sight?" some observations concerning "belated assistance given to South Crofty," and that "it was only after the Cornish Pump broke down at South Crofty . . . the Government took positive steps to assist the mine."

As Chairman of the Company, and in close touch with Government Departments during the past six years, I have no knowledge whatever of "belated assistance" let alone "positive steps" in that direction to assist our mine. When the pump broke down, it was quite true Sir Andrew Bryan kindly offered the full help his Department could give, but when we followed the matter up, we found no help of a suitable sort was available, and the difficulties of obtaining under emergency conditions essential pumps to tackle the disaster, fell wholly on Mr. Belcham and the Management here. So far from assistance, there is an Account outstanding against the Government owing since June of last year on the termination of the contract with the Ministry of Supply, which has not been paid, and which we are pressing with all the vigour we possess to get settled.

In addition, we have the melancholy catalogue of "assistance" in the last Budget wherein initial allowances cease next April, long before our pumping installation will have been completely paid for. On the other hand, we know that the Shipping Industry has had this allowance in their case continued, and it seems to me therefore, instead of being singled out for "assistance" as we were in the Westwood Report, we have now been penalised for our persistence in "forking" the mine without any assistance whatever except our own energy and ability.

Yours faithfully,

HARRY RICH.

Lenfred House, Redruth.

June 7, 1951.

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The Mining Markets

(By Our Stock Exchange Correspondent)

Details of the new Mauritius loan have been announced. This is to take the form of a 3½ per cent stock totalling £2,615,000 and dated 1965/68. The issue price is 97 per cent. Rumours that this is the first of a string of gilt-edged issues shortly to be introduced did nothing to strengthen the market.

Gold shares have had another bad week and Kaffirs were no exception. It is now becoming apparent that even the increased income derived from premium sales has been insufficient to offset the sharp rise in costs. This hard fact has been underlined by the recent dividend announcements of leading Rand producers. June distributions by City Deep, Consolidated Main Reef, Durban Deep, Rose Deep, Robinson Deep, and Sub Nigel were all below the equivalent distributions for last year, and it is difficult to see any immediate chance of improvement. The recent fall in share prices, however, is beginning to uncover a more attractive yield basis for some of the leading mines. Dealers in the Kaffir market report an almost complete absence of buyers. Doornfontein alone have been a better market on rumours emanating from Johannesburg that certain difficulties at the mine have been satisfactorily overcome. Platinum shares have been in demand following the decision to double Rustenburgs output and to increase the capital. Potgeitersrust at one time touched 9s.

Diamond shares have reacted after their recent burst of activity. The depression in the Kaffir market having spread to this section. Price falls, however, reflect idle conditions rather than any real pressure of selling.

The price of 3 months tin on the London Metal Exchange fell to £943 15s. on Wednesday last. So far from causing

fresh weakness, share prices of many of the leading producers turned harder. The basis for this reaction is probably unconfirmed rumours that the United States may be considering re-entering the metal market before long. Yields on the leading shares in this section compare very favourably with those in other markets, 12 per cent or more being obtainable on many first class companies. Other encouraging features have been the continued expansion of earnings and dividend distributions, and the recent absence of alarming political news from Malaya. In spite of these more hopeful factors, tin shares to-day are definitely only for those investors with strong nerves. Beralts have again improved following the announcement that the output of Wolfram concentrates for May shows an increase of 29 tons on April figures. It is understood that the Portuguese Government has asked the company to step up production of wolfram ore by approximately 25 per cent so as to make supplies available to the United States without interference to deliveries to the U.K. The doubt over the increased export tax mentioned in this column last week has now been cleared up. The new tax will be 40 escudos per kilo compared with 36 escudos previously levied, and will not be in addition to it. The rise corresponds to an increase of 15s. per unit.

Interest revived in Lead/Zinc shares, most of the activity being confined to Barriers, which went ahead on moderate demand. The Chairman of Consolidated Zinc pointed out in a recent statement that the Ministry of Supply is buying substantial tonnages of lead from foreign sources at increasing premiums, while contracts with Commonwealth producers are based on official U.S. quotations. The Mexican export price of lead is already above this level, and sterling lead on the Continent stands at an even higher price. The board of Consolidated Zinc are understood to be watching the situation closely.

FINANCE	Price	+ or -	June 13	on week
African & European.....	31	-		
Anglo American Corp.....	23/9	-		
Anglo-French.....	23/9	-		
Anglo Transvaal Consol.....	46/3	-		
Camp Bird.....	12/9	-		
Central Mining (11 shrs.).....	4/9	-		
Consolidated Goldfields.....	2/9	-		
Consol. Mines Selection.....	35/7½	-		
East Rand Consol.....	41/1	-		
General Mining.....	51	-		
H.E. Prop.....	36/3	-		
Henderson's Transvaal.....	109/1	-		
Johnnies.....	3/4	-		
Rand Mines.....	71	-		
Rand Selection.....	40/1	-		
Union Corporation.....	10½	-		
Vereeniging Estates.....	51	-		
Wits.....	33/1	-		
West Wits.....	21	-		
RAND GOLD	Price	+ or -	June 13	on week
Blyvoor.....	49/9	-2/6		
Brakpan.....	19/3	-1/3		
City Deep.....	3/4	-		
Consol. Main Reef.....	2/1	-		
Crown.....	4/11	-		
Dagat.....	3/8	-		
Dominion Reef.....	1/9	-		
Doornfontein.....	27/9	-1/9		
Durban Deep.....	31	-1/7		
E. Daggas.....	24/1	-		
E. Geduld.....	3/4	-		
E. Rand Props.....	3/8	-		
Geduld.....	38/9	-3/1		
Grootvlei.....	15/9	-1/9		
Libanon.....	22/1	-1/9		
Luipaards Vlei.....	22/3	-1/9		
Manvlei.....	5/9	-1/4		
Medfontein East.....	21	-2/6		
Medfontein West.....	33/9	-1/9		
New Pioneer.....	24/1	-		
Randfontein.....	18/9	-		
Robinson Deep.....	14/1	-		
Rose Deep.....	37/6	-		
Simmer & Jack.....	15	-		
Springs.....	10/1	-		
Sub Nigel.....	31	-		
Van Dyk.....	30/1	-		
Venterspost.....	30/1	-		
Vlafontein.....	16/3	-		
Vogelstruisbuit.....	26/1	-		
West Driefontein.....	61	-		
W. Rand Consolidated.....	41/3	-		
Witwatersrand.....	39/6	-		

MISCELLANEOUS GOLD (contd)	Price	+ or -	TIN (Nigerian and Miscellaneous)	Price	+ or -
G.F. Rhodesian	8/9	-	34 Amalgamated Tin	11/6	-6/1
London & Rhodesian	6/1	-	34 Beralt Tin	26/6	-1/1
Motapa	2/10½	-4/1	41 Bisichi	4/9	-1/4
Mysoor	6/3	-	British Tin Inv.	17/9	-
New Guinea	1/7½	-	Ex-Lands Nigeria	7/9	-
Sundyroog	8/1	-	Ex-Lands Tin Area	4/1	-
Ooregum	3/9	-	Gold & Base Metal	17/3	-1/4
Oroville	12/6	-	34 Jantara Nigeria	7/4½	-3/4
St. John d'El Rey	35/6	-	10½ Jos Tin Area	11/6	-
Zans	15/1	-	Kaduna Prospector	4/6	-
			Kaduna Syndicate	6/6	-
			London Tin	5/0½	-1/4
			Ribon Valley	1/3	-
			United Tin	2/10½	-
DIAMONDS					
Anglo American Inv.	4½	-	SILVER, LEAD, ZINC		
Castles	39/6	-1/3	Broken Hill South	58/9	-6/1
Cons. Diam. of S.W.A.	3/8	-	Burma Corporation	4/1½	-
De Beers Deft. Bracer	61/9	-2/3	Consol. Zinc	37/9	-
De Beers Pld. Bracer	17/9	-	Lake George	28/9	-1/4
			Mineral Trust	5/14x	-
			Mount Isa	46/9x	-6/1
COPPER			New Broken Hill	30/7½x	-1/4
Chartered	75/1	-7/1	North Broken Hill	78/1	-1/1
Indian Copper	5/3	-	Rhodesian Broken Hill	21/3x	-3/1
Messina	5/8	-	San Francisco Mines	37/9x	-1/4
Nchanga	7/8	-	1 Trecca	3/11	-1/4
Rhod. Anglo-American	64/3	-1/1			
Rhodesian Selection	41/1	-3/4			
Rhokana	22/1	-			
Rio Tinto	22/1½	-1/4			
Roan Antelope	52/6	-1/4			
Selection Trust	52/6	-1/4			
Tanks	46/3	-			
Thariss Sulphur Br.	55/1	-			
TIN (Eastern)					
Anglo-Burma	3/6	-1/4			
Ayer Hitan	30/1	-			
Bangrin	36/6	-			
Gopeng	14/6	-			
Hongkong	12/3	-			
Ipo	30/1	-			
Kamunting	13/7½	-1/4			
Kepong Dredging	13/3	-			
Kinta Tin Mines	13/9	-			
Kramat Pulai	17/6	-1/3			
Malayan Dredging	24/7½	-1/4			
Pahang	16/6	-			
Pengkalen	10/7½	-			
Petaling	12/3	-			
Rambutan	16/3	-			
Siamese Tin	25/1	-			
Southern Kinta	13/9	-			
S. Malayan	31/3	-			
S. Tronoh	23/3	-			
Sungei Kinta	19/9	-			
Tekka Tin	10/9	-			
Trenoh	30/1	-1/1			

Company News & Views

Kaffir Dividend Payments Lower

The Kaffir dividend season which opened on Wednesday of last week with the declarations of half-yearly dividends by companies operating in the Rand under the aegis of the Union Corporation, continued dull with the further half-yearly dividend announcements of companies operating in the Central Mining-Rand Mines group, and in the Consolidated Goldfields of South Africa, group. Although the recent decline in the gold share market would have appeared to have discounted these results there were some who felt that the distributions would, in general, be maintained at the same level as in December last.

This was largely due to the feeling that the talk of revaluation of the pound, and political unrest in South Africa, were affecting the market unduly, and that the premium gold sales, which for the first quarter of the current year represented an addition of some 17 per cent to profits before taxation, would counteract to a large extent the increased costs.

However, the present dividend declarations make it clear that the most potent factor to be taken into consideration is rising costs, which is gradually putting the companies back into much the same position as they were immediately prior to devaluation in September, 1949.

Of the four companies in the Union Corporation group, E. Geduld, Geduld, Grootvlei and Marievale, only the last mentioned maintained its distribution (1s.) at the same level as in December last. Compared with the dividend paid in December, 1950, E. Geduld lowered its payment by 3½d. to 2s. 1d. Geduld's fell 1s. 3d. to 7s. 3d. and Grootvlei was 1s. 0½d. lower at 1s. 6d.

In the Central Mining-Rand Mines group, Blyvoor (1s. 4d.), E. Rand Prop. (2s. 6d.), Rand Mines (3s. 6d.), and Transvaal Gold (1s.) repeated their December payments, but City Deep's distribution was down 6d. to 3s., Consol. Main Reef fell by a similar amount to 3s. 6d., as did Durban Deep's payment of 2s. 6d. Crown's payment declined by 1s. to 5s. 6d., Modder East likewise declared 1s. less at 3s., and Rose Deep's distribution dropped 9d. to 2s. 9d.

In the Consolidated Gold Fields group, the maiden dividend of 3d. per 10s. share by Libanon Gold Mining was a pleasant surprise especially in view of the chairman's statement at the last annual meeting that it was unlikely that a dividend would be paid in the current year. Although Vlakfontein's distribution dropped to 10d. against 1s. previously, this was better than expected. In fact the distributions made by the Gold Fields group was more in keeping with previous estimates. In addition to the two companies in this group mentioned above Luipaards Vlei (1s.), Robinson Deep (1s.), Simmer (4d.), Vogels (1s.) and West Wits. (1s. 3d.) repeated their December distributions, but Sub Nigel's payment fell 6d. to 5s. 3d., Venterspost dropped 1d. to 1s. and Rietfontein's declined 1½d. to 1s. 6d.

Similar dividend declarations by Anglo American group and "Johnnies" group of companies are expected shortly. However, it is difficult to envisage a reversal of the present trend as none of the mines have escaped the impact of increased working costs.

Lyndhurst Deep Strengthens Revenue Reserves

Although the good results shown by Lyndhurst Deep-Level (Gold and Silver) for the year 1950 can be partly attributed to the first full year in which the higher gold price has been operative, the net profit, after providing for taxation and depreciation, of £138,721 against £71,592, was largely the product of the company's own

efforts. Tonnage crushed at the Konongo plant increased by over 15,000 tons to 33,000 tons, the milling grade rose from 6.99 to 7.30 dwt. per ton, and gold production totalled 10,271 f.oz. compared with 5,421 f.oz. in 1949. However, working costs, excluding development, was up 3s. 3d. to 47s. 11d. per ton milled. Despite the better earnings, the distribution was maintained at 5 per cent, which absorbed £11,550 leaving the forward balance higher by £10,309 at £13,707.

The strengthening of revenue reserves is necessary as development work during the year failed to expose any notable strikes, save one in the Boabedro section, where 185 ft. was exposed on the 6th level, averaging 21.5 dwt. per ton over 51 in. The company is carrying out a considerable amount of surface prospecting and although no major discoveries have been made, several gold bearing areas were located that are being further investigated. In the Odumase extension concession, a manganiferous horizon in the Birrimian rocks was located and sampling results indicate that beneficiation tests may be warranted if sufficient tonnage can be proved.

The ore reserves at the end of 1950 amounted to 61,715 tons, averaging 14.7 dwt. per ton over 57 in., compared with 76,420 tons, averaging 12.9 dwt. per ton over 58 in.

Gold Fields Australian Development Co.

The report and accounts of the Gold Fields Australian Development Co. for the year ended December 31, 1950, disclose that the total loss to be carried forward was £28,070 compared with £24,142 previously. The company owns the whole of the capital of Moonlight Wiluna Gold Mines, which is registered in Western Australia, and this company's forward debit balance at the end of 1950 advanced to £123,767 as against £105,658 in the previous year. At the Mount Ida Gold Mine, which the company purchased in 1941, production commenced in the latter part of June, 1950, and by the end of the year had treated 12,880 tons for a recovery of 5,588 f.oz. gold. A shortage of labour at this mine hindered development and the footage advanced at 1,140 ft. was a decrease of 1,214 ft. compared with the previous year. Nevertheless, good values were exposed on levels 5 and 6, and at the year end ore reserves, proved and probable, were estimated to contain 128,595 tons, of an average of 9.56 dwts. per ton. Due to the shortage of labour, it has been necessary to place the Porphyry (1939) Gold Mine N.L., in which the company has a 33⅓ per cent interest, on a care-and-maintenance basis for the time being.

Scottish Australian Mining Co.

Outputs of the collieries under lease to the Scottish Australian Mining Co. showed a satisfactory increase during 1950 over the previous year's figures, the total tonnage won during the year amounting to 83,723 tons compared with 64,185 tons for 1949. Furthermore, production for the first four months of the current year has been maintained at the improved level.

Net profit for the year was £1,011 (£252), out of which a dividend of 6 per cent on the £50,000 Ordinary stock less tax, absorbed £1,575, leaving the sum of £57 to be carried forward compared with £82 in the preceding year.

As previously announced, the company made a distribution of 1s. 6d. per 4s. unit of stock out of the surplus realized from that part of the Lambton Estate resumed by the Housing Commission of N.S.W. during 1947. This distribution, being out of capital realizations, was not subject to income tax.

At present, the chairman, Mr. Ian Forbes states the company is negotiating with the company's lessees to enable them to extend their workings and to exploit the unworked seam in areas adjacent to those at present under lease.

Output of Martha Gold Mining

Output of Martha Gold Mining Co. (Waihi) Ltd., continues to decrease. In 1950, the tonnage of ore mined fell by 3½ per cent, but gold recovery decreased by 14½ per cent, compared with 1949. In that year, ore mined was 91,155 s. tons, and the gold recovery 26,604 oz., together with 232,448 oz. silver. Production in 1950 was 87,889 tons of ore for the recovery of 20,293 oz. gold and 198,629 oz. silver. Profit over the past five years has been small, and continued operations for extraction of the remaining ore are possible only while the existing price for gold continues.

During 1950 net profit, after writing off £1,666 for depreciation of plant and machinery, charging £8,421 in respect of U.K. and New Zealand taxation, and transferring £2,000 to the staff fund, amounted to £5,739. From the £17,907 available a dividend of 2d. per share, free of income tax, absorbed £8,265, leaving a balance of £9,642 (£10,990) to be carried forward.

The directors report that discussions are now taking place regarding future operations and it is hoped that the chairman, Mr. G. R. Mitchison, will be able to give shareholders more definite information at the annual meeting to be held at 48, Gresham Street, London, E.C.2 on Tuesday, June 26, at 11.30 a.m.

Company Shorts

Minerals Separation Share Offer.—Minerals Separation have decided to offer 80,000 new shares of 5s. each at 12s. 6d. per share to the holders of the existing 800,000 stock units of 5s. each who are registered stockholders on June 21. The offer will be in the ratio of one new for every ten stock units held on that date, fractions of new shares being disregarded. The share issue is part of the unissued share capital of the company, and will bring in £50,000 new money.

During the calendar year 1950, the only important change in the company's investments was a further acquisition of shares in Brandeis Goldschmidt, the old-established metal brokers and merchants, with the result that the company now holds, directly and indirectly, some 40 per cent of the equity of that company. Gross earnings for the year amounted to £178,567 (£170,465). Net profit after tax amounted to £84,639 against £72,849. Dividend payments aggregating 2s. 6d. per 5s. unit (same) absorbed £53,500, leaving the carry forward higher at £176,503 compared with £145,364 previously.

"Writs" Results.—The profit and loss account for the calendar year 1950 of West Rand Investment Trust disclosed that revenue from dividends, interest and share dealing increased by £178,655 to £620,882. Profit for the year amounted to £546,139 to which was added £270,984 brought in, making £817,123 available. Two dividend payments totalling 1s. 14d. absorbed £488,701, leaving the carry forward higher at £321,922 against £270,984.

Shares and interests in other concerns at cost, less amounts written off, as at December 31, 1950, figured in the balance sheet at £8,917,376 against £8,931,877. The market value of these investments at the same date, taking Stock Exchange quotations where available, and directors' valuation (but not above cost) in other cases, was £18,127,603.

New Era Consolidated.—This company's results for the year 1950 show gross revenue lower at £174,057 against £194,624. Profit before tax amounted to £151,661 (£176,906). From the £194,777 (£213,191) available dividend payments totalling 1s. 1½d. (same) absorbed £61,875, taxation required £16,000 (£31,000), general reserve received £50,000 (£75,000), leaving the carry forward higher at £64,702 compared with £43,116.

The company has a substantial interest in the West Rand Investment Trust, and is largely interested in the producing and developing mines on the West Wits line.

Lorion and African Mining.—Profit and loss account of this company for the year ended September 30, 1950, showed a loss of £1,090 against £17,429 previously. The directors have decided to transfer to General Reserve the unappropriated profit of £44,586 brought forward from the previous year and to bring the company's investments and participations in oil and mining ventures in line with current money valuations. As a result there is a debit balance of £298,383.

"Osifs" Acquire Holding in "Geoffries."—At the meeting of Orange Free State Investment Trust in Johannesburg on June 7 last, the chairman, Sir Ernest Oppenheimer, said that since the publication of the Statement, we have

acquired a substantial shareholding in General Exploration, Orange Free State. Recent drilling on ground in which that Company holds the mineral rights has proved the existence of several highly payable reefs. Further drilling is in progress to determine the extent of these reefs, which have been proved to be present along a line from borehole No. 1 on the Farm Kromdraai on Loraine Gold Mines, Limited, property in the north-west to borehole No. 1 on the farm Rosedale No. 298.

£122,500 Offered Holfontein Gold for its Mineral Rights.—Holfontein (T.C.L.) Gold Mining, which is in voluntary liquidation, has announced that tenders were recently invited for its mineral rights, freehold property and certain buildings. The highest offer received for these assets was £122,500 and a sale at this figure has been effected by the liquidators, subject to the conditions of the tender.

Lake View and Star's March Quarterly Development Results.—For the period January 3 to March 27, 1951, development footage advanced totalled 4,576 ft. of which 2,819.5 ft. was driven on lodes, 1,504 ft. or 53 per cent being in ore averaging 5.24 dwt. per ton over a width of 54 in. In the Lake View and Associated Mines, of 1,071.5 ft. advanced 691 ft. averaged 5.3 dwt. per ton over a width of 55 in. In the Western Group of Mines driving on the 'Minor Lodes' and Nos. 2, 3 and 4 lodes totalled 1,748 ft. of which 813 ft. averaged 5.16 dwt. per ton over a width of 53 in.

New Guinea Goldfields Running-in Plant.—An interim report issued by New Guinea Goldfields states that the amalgamation section of the treatment mill at Golden Ridges, near Wau, has now been completed and that the plant is undergoing a running-in period using low-grade ore. The throughput and grade of ore, the report states, will be stepped up gradually and it is expected that this section will be running to full capacity of 100 tons daily this month. Tailings from this plant will be stored pending construction of the plant to extract residual gold values by cyanidation process. The interim report also announces that the production and sale of timber continues to be satisfactory, and that the income from alluvials is being maintained at recent levels.

Land-slip at Idris Hydraulic.—A cabled report received from the general managers of Idris Hydraulic Tin states that a large land-slip has occurred in the Batu Karang Section of the property involving loss of equipment and the closing of the north portion of the existing paddock. This will adversely affect outputs for some considerable time, the cable states.

GOLD COAST MAIN REEF

The Seventeenth Annual General Meeting of Gold Coast Main Reef Ltd., was held in London on June 8.

Major-General W. W. Richards, C.B., C.B.E., M.C., Chairman of the Company, who presided, said:—

Members will have observed the severe drop in the profit to £9,937 for the year ended June 30, 1950, as compared with that for 1948-49 which amounted to £63,616. We were able nevertheless to pay a dividend of 5 per cent, less income tax, by utilizing a part of the unappropriated profit brought forward from the previous year.

Members will expect me to say a few words concerning the company's operations and profits for the current financial year which ends on June 30.

As regards the present operations, the deeper levels in the main shaft area between the 12th and the 17th level horizons are opening up reasonably well, although it is too early to form any definite comparison with the disturbed zone immediately above.

As to the labour situation, we enjoyed a period of comparative plenty throughout the nine months ended March 31, 1951. Since that date, the seasonal decline has again set in but, so far, its impact has not seriously affected operations.

I will now pass to the position of the company at the present time.

In my printed review, I gave a comparison of the mine working profit for the four months January to April, 1951, which was £37,600, as compared with £9,000 for the same period in 1950.

We have now completed a pro forma analysis of the profits for the current year and, as a result, I am pleased to declare on behalf of the Board an interim dividend of 5 per cent, less income tax, for the year ending June 30, 1951.

The following is an extract from the statement of the Chairman which was circulated with the report and accounts:—

The total ore reserves have been well maintained. At the June 30, 1950, they were computed at 366,601 tons of an average value of 8.92 dwt. per ton over a width of 65.9 in.

I should like to express our appreciation of the services rendered by Mr. F. Clelland and his colleagues and staff, both European and African, in West Africa; and also of the help and guidance of our consulting engineers, the West African Gold Corporation Ltd.

The report and accounts were adopted.

AFRICAN & EUROPEAN INVESTMENT COMPANY, LTD.

The Forty-Sixth Ordinary General Meeting of African and European Investment Co. Ltd. was held on June 8 in Johannesburg; **Mr. R. B. Hagart**, the Chairman, presided.

The Chairman, in the course of his speech, said:—

The profit and loss and appropriation accounts give full details of the operating results for the year. Revenue for the year at £714,482 was £206,249 less than in 1949, but this figure is mainly accounted for by the smaller profit earned during the year on share transactions. Dividends and interest receipts showed a welcome increase from £215,891 to £262,173. In this connection I would remind you that a very large part of your company's shareholdings is in gold mining companies in the Orange Free State, which are still in the development stage. These companies should reach production over the next few years when regular and increasing dividend income from this source may be anticipated.

Shareholders were notified in an announcement published on September 18, 1950, that provision had been made for raising of funds to the amount of £2,195,000. Of this amount, £1,700,000 was borrowed from the Anglo American Corporation of South Africa Ltd. in the form of Unsecured 4½ per cent Registered Convertible Notes and at the same time that corporation undertook to subscribe prior to December 31, 1951, for 900,000 6 per cent Cumulative Preference shares of 10s. each at the price of 11s. per share, which will yield funds totalling £495,000. The effect of these arrangements has been to place the company in funds to meet its present known commitments in bringing the various developing gold and coal mines in which it is interested to the production stage.

ORANGE FREE STATE RIGHTS AND PROSPECTING

Our main interests in the Orange Free State consist of substantial shareholdings in Welkom Gold Mining Co. Ltd., President Steyn Gold Mining Co. Ltd. and President Brand Gold Mining Co. Ltd., but as will be seen from the directors' report we also have an interest in other developing mines in the Orange Free State and in certain areas which are still being prospected.

WELKOM GOLD MINING CO. LTD.

During the year No. 1 shaft was sunk to a depth of 3,010 ft., at which point shaft-sinking operations were temporarily stopped in order to start development and to bring the mine to production on as early a date as possible.

The B reef in the Gold Estates zone was intersected at a depth of 2,250 ft. and the Basal reef at 2,732 ft. Sinking operations were completed towards the end of July and, following a period for equipment of the shaft, development operations started on various levels.

No. 2 shaft was deepened to a total depth of 2,950 ft., and sinking operations stopped at the end of May, when work to equip the shaft followed immediately. Concurrently with the equipping operations development work started, and at the year-end operations were well launched on three levels.

Up to the end of March, 1951, a total of 23,056 ft. of development had been completed from both shafts; of this, 1,316 ft. was driven on reef and 750 ft., or 59.06 per cent, was payable, giving an average assay value of 44.63 dwt. over an average width of 8.81 in., equivalent to 393 in.-dwt.

A substantial amount of the development during last year and the first quarter of 1951 was in country rock in the immediate vicinity of the shafts and in crosscutting to the Basal reef on three levels.

PRESIDENT STEYN GOLD MINING CO. LTD.

No. 1 shaft was sunk a further 1,819 ft. to a depth of 3,007 ft. at December 31, 1950, and by the end of March, 1951, a further 770 ft. remained to be sunk to reach the expected horizon of the Basal reef.

No. 2 shaft advanced 1,819 ft. during the year and at the end of March, 1951, had reached a depth of 3,035 ft. The horizon of the Basal reef in this shaft is estimated to be at 4,900 ft.

Two boreholes, W.P. 5 and W.P. 6, were sunk during the year in the neighbourhood of No. 1 shaft to obtain further information for planning the elevation of the shaft stations and the development programme from this shaft. In borehole W.P. 5 an initial intersection of the Basal reef at 3,468 ft. assayed 53 in.-dwt. whilst in a deflection a value of 328 in.-dwt. was obtained at 3,446 ft. Borehole W.P. 6 intersected the Basal reef at 3,932 ft. assaying 546 in.-dwt.

The depths at which these holes intersected the Basal reef and the satisfactory values obtained indicate that a large block of payable reef is available above 4,200 ft. and the technical advisers recommend that No. 1 shaft should be stopped temporarily at a point just below the Basal reef horizon so that a

start can be made on development operations and the main connecting haulage with No. 2 shaft. This will assist in building up ore reserves in the vicinity of No. 1 shaft and will allow crushing operations to begin at an earlier date than would have been the case if both shafts were sunk to their final depths before any major development programme could be undertaken.

PRESIDENT BRAND GOLD MINING CO. LTD.

No. 1 shaft was sunk 1,494 ft. during the year and at the end of March had reached a depth of 2,215 ft. which is estimated to be 2,237 ft. above the horizon of the Basal reef. At No. 2 shaft the collar was completed in March, 1950, and by the end of March, 1951, the shaft had been sunk 1,529 ft.

The rate of sinking at both shafts was retarded by the intersection of water-bearing fissures which required sealing by cementation, and by the difficulties caused through having to use temporary hoists to depths which were beyond their efficient working capacity. During the year, however, the permanent steel headgears at both shafts were brought into commission and permanent winders and sinking hoists are now operating at both shafts.

DRILLING OPERATIONS

Since the end of the year borehole D.P.2 situated at the eastern beacon of Helderwater No. 494 has been completed. This borehole was started on August 24, 1950, and has been completed to a depth of 5,201 ft. Three deflections of the original hole were made and the following were the results:—

The "A" and "B" reefs and the Leader reefs gave small or negligible values.

The Basal reef was intersected at a depth of 5,120 ft. with the following results:—

Original hole 39.5 dwt./6.0 in. cw. (237 in.-dwt.).

1st deflection 44.5 dwt./6.4 in. cw. (285 in.-dwt.).

2nd deflection 8.55 dwt./5.8 in. cw. (50 in.-dwt.).

3rd deflection Trace/52.0 in.

Borehole S.A.H. 1 situated at the Common Beacon of Homestead No. 668 and Saaiplaas No. 690 has also been completed. The borehole was started on July 8, 1950, and was stopped at a depth of 6,729 ft. Two deflections of the borehole were made with the following results:—

The "A" Reef and Leader Reef carried negligible values. On the "B" Reef two intersections gave an average of 128 in.-dwt. at a depth of 6,356 ft.

The Basal Reef was intersected at 6,769 ft. giving the following results:—

Original hole 6,769 ft. assaying 2.2 dwt./30.0 in. cw. (66 in.-dwt.).

1st deflection 8.1 dwt./28.3 in. cw. (229 in.-dwt.).

2nd deflection 6.6 dwt./27.6 in. cw. (182 in.-dwt.).

COAL

Although the company is a large shareholder in the colliery companies of the group, the principal coal interests are held through the medium of our associated company, the Vereeniging Estates Ltd.

The producing collieries under our administration, including Amalgamated Collieries of South Africa Ltd., South African Coal Estates (Witbank) Ltd., Springbok Colliery Ltd., The Coronation Collieries Ltd., Vryheid Coronation Ltd., Blesbok Colliery Ltd., sold during 1950 a total of 11,780,148 tons of coal, equal to 40.37 per cent of the total Union production.

OTHER INTERESTS

I should like to refer briefly to certain companies in which we are substantially interested.

VEREENIGING ESTATES

Profits for the year 1950 amounted to £667,000 as against the 1949 figure of £557,000 and, in addition, surpluses arising from the realization of investments and other fixed assets totalled £73,000.

Dividend declarations for the year totalled 25 per cent, an increase of 2½ per cent over that made in respect of the year 1949.

The company is the principal shareholder in the colliery companies of the group. The dividend accruing from these investments is considerable and, in addition to its interest in the Vereeniging Brick and Tile Co. Ltd., the company owns valuable assets in the form of coal, township, industrial and agricultural properties.

THE UNION STEEL CORPORATION (OF SOUTH AFRICA) LTD.

The profit of the corporation for 1950 was £477,000 as against £491,000 in the year 1949.

Provision for taxation on profit earned was £145,000.

Dividend declarations were maintained at 10 per cent plus 2½ per cent bonus on both Ordinary and Preference shares, making a total distribution of £162,500.

The report and accounts were adopted.

THE CENTRAL MINING-RAND MINES GROUP

DECLARATION OF DIVIDENDS

NOTICE IS HEREBY GIVEN that DIVIDENDS have been declared payable to shareholders registered in the books of the undermentioned Companies at the close of business on June 30, 1951, and to persons presenting the respective Coupons detached from Share Warrants. Dividends on shares included in Share Warrants will be paid in terms of a notice to be published later by the London Secretaries of the Companies.

The Dividends are declared in South African currency and become due on July 2, 1951. Payment from the London Office will be in British currency at par provided that should there be any difference that may be regarded by the Boards as material between the two currencies on July 2, 1951, payment will be made on the basis of the equivalent British currency calculated at the rate of exchange ruling on that date.

Warrants in payment will be posted on or about August 8, 1951, to shareholders at their registered addresses or in accordance with their written instructions. Warrants will be despatched from the Head Office, Johannesburg, to addresses in Africa south of the Equator and from the London Office to addresses elsewhere. Instructions which will necessitate an alteration in the Office from which payment is to be made must be accepted by the Companies on or before June 30, 1951. Other changes of dividend instructions to apply to these dividends must be received by the Companies not later than July 28, 1951.

The Transfer Books and Register of Members will be closed in each case from July 2 to 7, 1951, both days inclusive.

Name of Company (Each incorporated in the Union of South Africa)	Dividend No.	Coupon No.	Dividend Per Share s. d.
Rand Mines, Limited ...	96	96	3 6
Blyvooruitzicht Gold Mining Company, Limited ...	11	—	1 4
City Deep, Limited ...	63	63	3 0
Consolidated Main Reef Mines and Estate, Limited ...	83	80	3 6
Crown Mines, Limited ...	100	100	5 6
Durban Roodepoort Deep, Limited ...	61	61	2 6
East Rand Proprietary Mines, Limited ...	63	64	2 6
Modderfontein East, Limited	48	29	3 0
Rose Deep, Limited ...	92	92	2 9
Transvaal Gold Mining Estates, Limited ...	81	81	1 0

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London Office,

4 London Wall Buildings, E.C.2.

June 12, 1951.

DIVIDENDS

Blyvooruitzicht Gold ls. 4d. (Aug. 8)
Coalite & Chemical Products 3%
Gold Coast Main Reef 5% i (July 10)
Transvaal Gold Mining ls. (Aug. 8)
Kepong Dredging 15% i (July 6)
Puket Tin 10% i (July 3)
Rand Mines 3s. 6d. (Aug. 8)
Rawang Tin Fields 10%
Sn. Tronoh, Tin 20% i (July 10)
Tronoh Mines 25% i (July 12)
i interim

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Topical News in Brief

Nickel Mining in Cuba.—Contracts for the rehabilitation and operation of the Nicaro Nickel Company have been granted recently to two U.S. firms, viz., the Frederick Snare Corp., and the Mining Equipment Company. All the ore mined will be shipped to the U.S.

Pakistan to Buy Equipment for Geological Survey Laboratory.—The Pakistan authorities intend to buy scientific equipment worth Rs.36 lakhs in the U.K. and on the Continent to be installed, *inter alia*, in the Geological Survey Laboratory to be set up by the Survey General of Pakistan and in the Laboratory of Scientific and Industrial Research.

British Insulated Callender's Cables Ltd.—This well-known British company will be a partner of a new commercial organization to be formed in Lisbon for the manufacture of various types of insulated cables, including telephone cables. According to Reuter, the new organization will supply suitable machinery and equipment. The capital of the company is understood to be 12,000,000 escudos.

Venezuelan Steel Production.—The Venezuelan Minister of Mines has announced that the Venezuelan Development Corporation has completed plans for the processing of iron in the mines of Guayana, and that a plant with a capacity of 70,000 tons per year will soon start operations. Exports of iron ore have already begun, and surveys indicate that reserves may total more than a billion tons of top-grade ore.

Coal Deposits Discovered in Pakistan.—The Geological Survey of Pakistan has reported that coal deposits occur in certain areas about 20 to 35 miles north of Barkhan. The total reserve is estimated to be more than 200,000 tons. Of these, the Noham coal seam varies in thickness from six inches to one foot, while at Bahadur Siah, about 15 miles further north, there are at least three coal seams six inches to nine inches thick.

Funds for Industrial Diamond Production.—The E.C.A. is to advance up to 456,250,000 francs to increase industrial diamond output in French Equatorial Africa, the E.C.A. mission to France announced. Repayment will be in diamonds delivered to the U.S. Government. The advance will be made to the Société Minière Intercoloniale, a French company which has produced about 25 per cent of the diamonds mined in French Equatorial Africa since 1938.

Australia Seeking Equipment Abroad for Open-Cut Mining.—Tenders for the supply of equipment to speed up open-cut mining in N.S. Wales have been invited from overseas by the Australian Joint Coal Board. Its chairman, Mr. Cochran, said that the need was so urgent and supplies were so difficult to obtain that the Board was prepared to buy well-kept second-hand equipment.

The Minister for National Development, Senator Spooner, said that Australia's future coal requirements could not be met unless production from open-cut mines was lifted from 1,600,000 tons to 5,000,000 tons a year by 1953.

Famine Threatening Bihar's Mica Production.—Famine conditions in Bihar have touched the industrial belt, particularly the mica and coal belts in Hazaribagh, Jharia, Bokaro and Karanpura, and are likely to affect production. About 40,000 mica miners, 35,000 mica factory workers and 300,000 hand-splitters in the mica belt of Hazaribagh—the world's largest mica-producing area which produces 80 per cent of India's mica output and exports annually Rs.50,000,000 worth of this dollar-earning strategic material—and in parts of Gaya, have been affected by the food shortage. About 500,000 coal-miners of Jharia, Bokaro and Karanpura and their dependants are also suffering from malnutrition.

Mineral Developments in Western U.S.—In Latah County, Idaho, Beryllium and Mica Corporation is about ready to put its 50 ton mill in operation. Products will be wet-ground mica, beryllium powder and other rare earth concentrates not designated.

Howe Sound Co., which is developing the Blackbird cobalt mine through its subsidiary, Calera Mining Co., is planning increased milling facilities to be initiated before the plant now under construction is completed. The present plant is designed for a daily capacity of 600 tons and this will be increased to 1,000 tons. The company has just completed construction of a cobalt refinery at Garfield, Utah, which will have an annual output of 2,000,000 lb.

Consolidated Coppermines Corporation has commenced production from its Old Glory Hill deposit near Kimberly in the Ely district of Nevada. Mining will be by open pit and stripping is going on at the rate of 25,000 tons daily. The ore body is estimated to contain 3,000,000 tons.

Mining News from New Caledonia.—New equipment has been obtained with E.C.A. aid for installation at the Thio Mine, New Caledonia, of the Société Le Nickel. This company has begun producing iron ore on a limited scale in the Carénage Bay area of New Caledonia during the third quarter of last year. An initial shipment of over 2,000 tons was sent to Broken Hill to determine whether New Caledonian iron ore can meet Australian requirements.

Conserving India's Coking Coal Resources.—The Council of Scientific and Industrial Research of India has recently approved a project for pilot plant investigations, drawn up by the Metals Research Committee, for the smelting of iron ore without the use of coking coal. The project, estimated to cost Rs.500,000, will be undertaken by the Council in collaboration with the Tata Iron & Steel Co. and, if successful, will enable the conservation of India's coking coal resources on a large scale.

New Large Iron Ore Deposits Found in N.W. Germany.—Results of investigations carried out by the Office for Soil Research at Hanover indicate that iron ore deposits occurring in northern Germany, and estimated to contain several hundred million tons, are larger than presumed, states the February issue of *Mineral Trade Notes*, issued by the U.S. Bureau of Mines. Including the large deposits at Gifhorn and Salzgitter, exploitable iron ore deposits in northern Germany are now estimated at several billion tons.

French Morocco's Iron Ore Deposits.—According to *Mineral Trade Notes* of the U.S. Bureau of Mines, the only French Moroccan iron ore deposit which is at present being worked is situated at Ait Amar, about 180 kilometres east of Casablanca. Reserves are estimated at 6,000,000 tonnes of ore containing 45-46 per cent Fe., 12-14 per cent silica and over 0.6 per cent phosphorous. Possibilities of enriching and sintering this ore are being examined. The mine is equipped to produce nearly 500,000 tons p.a., but commercial operations are limited by the low quality of the ore. Other important sedimentary deposits are situated at Boulhaut, 50 kilometres east of Casablanca, with reserves of several million tons, near Mazagan, Tisnit, and at Kettara, north of Marrakesh. However, in spite of the fairly large number of deposits, their dispersion and difficult accessibility as well as the lack of coking coal and markets have hitherto prevented the development of a local iron and steel industry.

HIS MAJESTY'S COLONIAL SERVICE. FEDERATION OF MALAYA.

Vacancies exist for Inspectors of Mines in Malaya. Candidates should be between the ages of 25 and 35 and must possess a degree in Mining of a British University or the Diploma of a British School of Metalliferous Mining or a similar qualification granted in one of the Dominions, plus two years practical post-graduate experience in metalliferous mining. Duties include supervision of the enforcement of mining ordinances and mediation in mining disputes together with work in the Research and Development Branch and its application to mining practice. Appointments are permanent and pensionable after three years' probation. Free first class passages are provided for officers, wives and children, under the age of 10 (not exceeding 4 persons besides officer) on first appointment and on leave. Salary, according to qualifications and experience, in the scale \$440 per month (£616 per annum) by annual increments of \$30 per month (£42 per annum) to \$710 per month (£994 per annum) and then, subject to an efficiency bar, from \$760 per month (£1,064 per annum) to \$1,000 per month (£1,400 per annum). Pensionable expatriation allowance varying between \$90 per month (£126 per annum) and \$165 per month (£231 per annum) also payable. Temporary non-pensionable cost of living allowance is payable subject to the following maxima:—

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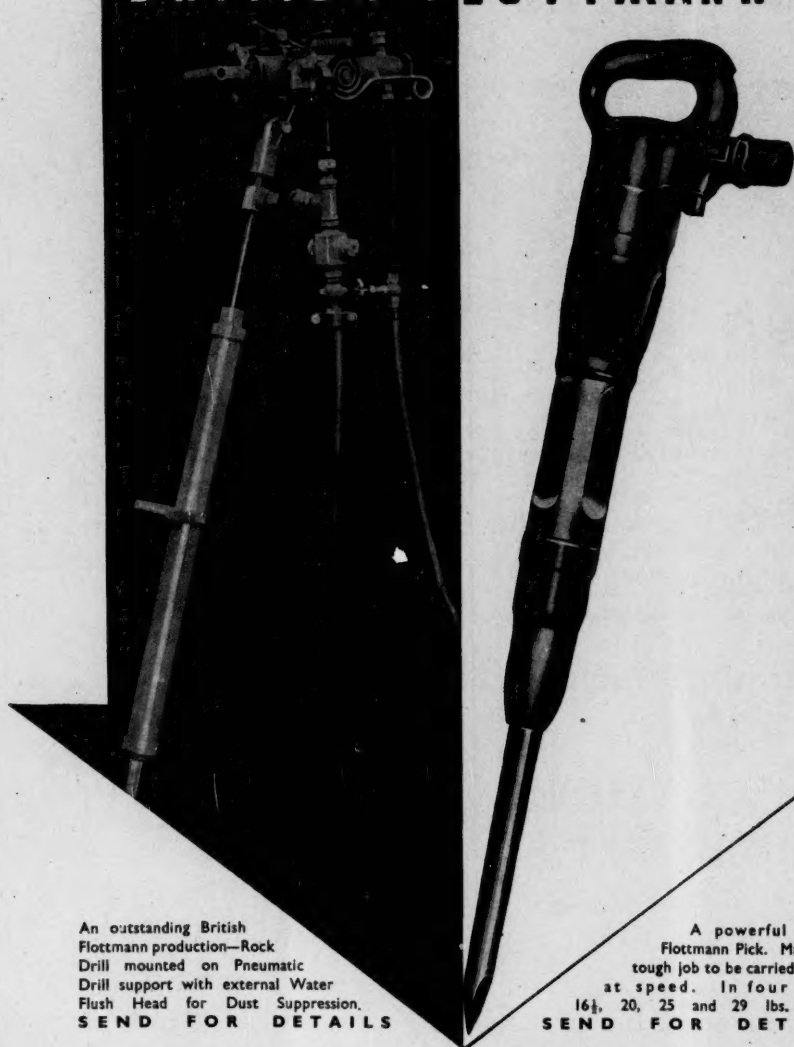
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